

# FlexWave™ MMW 110

## Millimeter Wave Transmission System



FlexWave MMW 110 is a point-to-point millimeter wave transmission system that operates in the licensed 71 GHz to 86 GHz spectrum and provides fiber-speed wireless Line of Sight (LOS) communications links within a 1 – 6 km range. The MMW 110 features a 10" lens making the product suitable to mount on electric poles and any other medium without the restrictions of high pointing stability. The MMW 110 has the largest beam width allowed by the FCC in the 71-86 GHz band (1.2 deg.).

### FlexWave MMW key features

- High Availability (99.999%)
- Best-in-class link performance
- High Capacity (3.072 Gbps)
- Reduced cost per bit due to the inherent cost- and data-efficiency of native Ethernet
- Same cost as microwave but with 10x higher bandwidth
- Simple and quick install

SPEC SHEET



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# FlexWave™ Millimeter Wave 110

1/08 • 105719AE FlexWave® Millimeter Wave 110

FlexWave MMW wireless links address the increasing shortage in metro access capacity by taking advantage of the recently allocated licensed 71-86 GHz spectrum. By using the unique propagation characteristics and the wide bandwidth of the spectrum, FlexWave MMW can support extremely high speed data transmission for short communication links.

FlexWave MMW provides fiber equivalent performance, 99.999% reliability and security, without the high installation costs and delays associated with inter-building fiber installations. FlexWave MMW can be engineered to operate in close proximity to other FlexWave MMW systems so that many links can co-exist in the same vicinity without causing interference to one another. FlexWave MMW is driving Ethernet beyond the office and into the metro enabling the move towards a single, scalable, end-to-end communications technology.

## Applications

FlexWave MMW can be used for various access and backhaul applications.

### Access

- Fiber Extension: Enterprise point-to-point, last mile and first mile connections
- Campus Connectivity
- Remote Storage Access
- Redundant Access / Network Diversity
- Metropolitan Area Networks (MAN)
- Disaster Recovery
- Homeland Security

### Backhaul

- Mobile, WiMAX & Muni-Wi-Fi Backhaul
- Distributed Antenna Systems (DAS) / Remote Radio Head (RRH) Fronthaul

The MMW 110 features a 3.072 Gbps data-rate technology. To the network the MMW radios will look and feel just like traditional fiber optic cable. Since the MMW systems are Layer 1 and protocol agnostic, they will interoperate with most commercial off the shelf (COTS) switches, routers and encryption devices.

- MMW 110 radios have Web/Java based monitoring. Accessible data includes: Signal Strength via AGC (Automatic Gain Control), Environmental (Temperature, Power, etc), Fiber Status and Frame Error Counters.
- The MMW 110 uses SNMP v1 to v3 for link management.



# FlexWave™ Millimeter Wave 110

## Specifications

**Frequency Band:** 71 – 76 GHz; 81 – 86 GHz  
**RF Interface:** FDD  
**Modulation:** BPSK  
**Latency:** <50 microseconds  
**Forward Error Correction:** n/a

### PHYSICAL

**Weight:** Radio + antenna + bracket: 20 kg (44 lbs)  
**Dimensions:** Radio + antenna: 14" diameter x 26" length (35.5 cm x 66 cm)

### TRIBUTARY

**Data Rate:** 3.072 Gbps full duplex Ethernet  
**Standards Compliance:** IEEE 802.3z  
**Interface:** Fiber, 1310nm SM and 850nm MM / LC connector  
**Optional Ethernet Interface:** 1000Base-SX with RJ-45 connector

### ELECTRICAL

**Input Voltage:** -48 VDC (-40.5 to -57VDC); 120 VAC 60 Hz (provided by external supply)  
**Power Consumption:** 50 Watt

### ENVIRONMENTAL

**Temperature Range:** -22° to +131°F (-30° to +55°C)  
**Altitude:** 15,000 ft (4500 m)  
**Outdoor Unit:** All Weather

### MANAGEMENT

Web/Java based monitoring  
 EMS SNMP v1, v2c, v3

### REGULATORY

**FCC:** 1.1310 RF MPE limits part 101

### ANTENNA

10" Lens  
 >43 dBi  
 <1.2°BW

### MOUNTING OPTIONS

Fine adjust pole mount fitting 2.5" to 5" OD (6.4 cm x 12.7 cm)  
 Wall-mount and tripod

## Ordering Information

Description	Catalog Number
<b>MMW System;</b> Vertical polarization, -48 VDC, 10" Lens and Mounting Kit	
Any Rate Full Duplex up to 1.536 Gbps	
Singlemode fiber interface	MMW-100-VSD-SYS
Multimode fiber interface	MMW-100-VMD-SYS
Full Duplex 3.072 Gbps	
Singlemode fiber interface	MMW-110-VSD-SYS
Multimode fiber interface	MMW-110-VMD-SYS

\*Product manufactured by LOEA Corporation.

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